Appln. No. 09/748,542
Amendment dated Nov. 8, 2004
Reply to Office Communication of Oct. 18, 2004
Docket No. 6165-169

IBM Docket No. JA9-1999-0251US1

Amendments to Claims:

This listing of claims will replace all prior versions and listings of claims in the instant application:

Listing of Claims:

Claims 1-15 canceled.

16. (Currently Amended) ~~The apparatus for speech recognition according to claim 14, further comprising:~~

An apparatus for recognizing speech from texts comprising disfluency words and non-disfluency words, said apparatus comprising:

a first judging processor, wherein said first judging processor judges whether words inputted as an object of recognition are non-disfluency words;

a second judging processor, wherein said second judging processor judges whether said inputted words constituting a condition necessary for recognizing said inputted words consist of only non-disfluency words, if said inputted words have been judged to be non-disfluency words by said first judging processor;

a first probability calculator, wherein said first probability calculator calculates a probability, if said conditional words have been judged as containing non-disfluency words and disfluency words by said second judging processor, by using a dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words, and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said inputted words;

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a second probability calculator, wherein said second probability calculator calculates said probability based on said first language model, if said object words have been judged as not being non-disfluency words by said first judging processor; and

a third probability calculator, wherein said third probability calculator calculates said probability based on said second language model, if said conditional words have been judged as containing only non-disfluency words by said second judging processor.

17. (Currently Amended) ~~The apparatus for speech recognition according to claim 13, said first probability calculator further comprising:~~
An apparatus for recognizing speech from texts comprising disfluency words and non-disfluency words, said apparatus comprising:

a first judging processor, wherein said first judging processor judges whether words inputted as an object of recognition are non-disfluency words;

a second judging processor, wherein said second judging processor judges whether said inputted words constituting a condition necessary for recognizing said inputted words consist of only non-disfluency words, if said inputted words have been judged to be non-disfluency words by said first judging processor;

a first probability calculator, wherein said first probability calculator calculates a probability, if said conditional words have been judged as containing non-disfluency words and disfluency words by said second judging processor, by using a dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words, and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said inputted words;

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a third judging processor, wherein said third judging processor judges whether a word immediately preceding said object word is a disfluency word; and

a fourth probability calculator, wherein said fourth probability calculator calculates said probability based on said first and said second language models, if said preceding word has been judged a disfluency word by said third judging processor.

18.   (Currently Amended)   The apparatus for speech recognition according to claim [[14]] 17, said first probability calculator further comprising:

a second probability calculator, wherein said second probability calculator calculates said probability based on said first language model, if said object words have been judged as not being non-disfluency words by said first judging processor.

~~a third judging processor, wherein said third judging processor judges whether a word immediately preceding said object word is a disfluency word; and~~

~~a fourth probability calculator, wherein said probability calculator calculates said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word by said third judging processor.~~

19.   (Currently Amended)   The apparatus for speech recognition according to claim [[15]] 13, ~~said first probability calculator~~ further comprising:

a third probability calculator, wherein said third probability calculator calculates probability based on said second language model, if said conditional words have been judged as containing only non-disfluency words by said second judging processor.

~~a third judging processor, wherein said third judging processor judges whether a word immediately preceding said object word is a disfluency word; and~~

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~~a fourth probability calculator, wherein said probability calculator calculates said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word by said third judging processor.~~

20. (Original) The apparatus for speech recognition according to claim 17, further comprising a fifth probability calculator, wherein said fifth probability calculator calculates said probability based on said second language model, if said preceding word has been judged as not being a disfluency word by said third judging processor.

21. (Original) The apparatus for speech recognition according to claim 18, further comprising a fifth probability calculator, wherein said fifth probability calculator calculates said probability based on said second language model, if said preceding word has been judged as not being a disfluency word by said third judging processor.

22. (Original) The apparatus for speech recognition according to claim 19, further comprising a fifth probability calculator, wherein said fifth probability calculator calculates said probability based on said second language model, if said preceding word has been judged as not being a disfluency word by said third judging processor.

Claims 23-25 canceled.

26. (Currently Amended) ~~The method for speech recognition according to claim 24, further comprising the step of:~~

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A method for recognizing speech from texts comprising disfluency words and non-disfluency words, comprising the steps of:

(a) judging whether words inputted as an object of recognition are non-disfluency words:

(b) judging further whether said words constituting a condition necessary for recognizing said input words consist only of non-disfluency words, if said inputted words have been judged to be non-disfluency words in said step (a):

(c) calculating a probability, if said conditional words have been judged as comprising non-disfluency words and disfluency words in said step (b), by using a dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words, and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said input words;

calculating said probability based on said first language model, if said object words have been judged as not being non-disfluency words in said step (a); and

calculating said probability based on said second language model, if said conditional words have been judged as consisting only of non-disfluency words in said step (c).

27.   (Currently Amended)   ~~The method for speech recognition according to claim 23, said step (c) further comprising the steps of:~~ A method for recognizing speech from texts comprising disfluency words and non-disfluency words, comprising the steps of:

(a) judging whether words inputted as an object of recognition are non-disfluency words;

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(b) judging further whether said words constituting a condition necessary for recognizing said input words consist only of non-disfluency words, if said inputted words have been judged to be non-disfluency words in said step (a);

(c) calculating a probability, if said conditional words have been judged as comprising non-disfluency words and disfluency words in said step (b), by using a dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words, and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said input words;

(d) judging whether a word immediately preceding said object word is a disfluency word; and

calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).

28.   (Currently Amended)   The method for speech recognition according to claim [[24]] 27, said step (c) further comprising the steps of:

calculating said probability based on said first language model, if said object words have been judged as not being non-disfluency words in said step (a).

(d) judging whether a word immediately preceding said object word is a disfluency word; and

calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).

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29. (Currently Amended) The method for speech recognition according to claim [[25]] 28, said step (c) further comprising the steps of:

<u>calculating said probability based on said second language model, if said conditional words have been judged as consisting only of non-disfluency words in said step (b).</u>

~~(d) judging whether a word immediately preceding said object word is a disfluency word; and~~

~~calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).~~

30. (Original) The method for speech recognition according to claim 26, said step (c) further comprising the steps of:

(d) judging whether a word immediately preceding said object word is a disfluency word; and

calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).

31. (Original) The method for speech recognition according to claim 27, further comprising the step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

32. (Original) The method for speech recognition according to claim 28, further comprising the step of:

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calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

33. (Original) The method for speech recognition according to claim 29, further comprising the step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

34. (Original) The method for speech recognition according to claim 30, further comprising the step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

Claims 35-37 canceled.

38. (Currently Amended) ~~The storage medium according to claim 36, wherein said computer program is designed to make the computer execute the additional step of:~~
A storage medium readable by a computer containing a computer program to recognize speech from texts comprising disfluency words and non-disfluency words, said computer program being designed to make the computer perform the following steps:

(a) judging whether words inputted as an object of recognition are non-disfluency words;

(b) judging further whether said words constituting a condition necessary for recognizing said inputted words consist only of non-disfluency words, if the inputted words have been judged to be non-disfluency words in said step (a);

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(c) calculating a probability, if said conditional words have been judged as comprising non-disfluency words and disfluency words in said step (b), by using a dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said inputted words;

calculating said probability based on said first language model, if said object words have been judged as not being non-disfluency words in said step (a); and

calculating said probability based on said second language model, if said conditional words have been judged as consisting only of non-disfluency words in said step (b).

39. (Currently Amended) ~~The storage medium according to claim 35, wherein said computer program is designed to make the computer execute the additional steps of:~~

A storage medium readable by a computer containing a computer program to recognize speech from texts comprising disfluency words and non-disfluency words, said computer program being designed to make the computer perform the following steps:

(a) judging whether words inputted as an object of recognition are non-disfluency words;

(b) judging further whether said words constituting a condition necessary for recognizing said inputted words consist only of non-disfluency words, if the inputted words have been judged to be non-disfluency words in said step (a);

(c) calculating a probability, if said conditional words have been judged as comprising non-disfluency words and disfluency words in said step (b), by using a

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dictionary containing a first language model which has been trained regarding disfluency words and non-disfluency words and a second language model which has been trained regarding non-disfluency words and trained to ignore disfluency words so as to recognize words showing the highest probability of representing said inputted words;

(d) judging whether a word immediately preceding said object word is a disfluency word; and

calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).

40. (Currently Amended) The storage medium according to claim [[36]] 39, wherein said computer program is designed to make the computer execute the additional steps of:

calculating said probability based on said first language model, if said object words have been judged as not being non-disfluency words in said step (a).

~~(d) judging whether a word immediately preceding said object word is a disfluency word; and~~

~~calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).~~

41. (Currently Amended) The storage medium according to claim [[37]] 40, wherein said computer program is designed to make the computer execute the additional steps of:

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~~calculating said probability based on said second language model, if said conditional words have been judged as consisting only of non-disfluency words in said step (b).~~

~~(d) judging whether a word immediately preceding said object word is a disfluency word; and~~

~~calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).~~

42. (Original) The storage medium according to claim 38, wherein said computer program is designed to make the computer execute the additional steps of:

(d) judging whether a word immediately preceding said object word is a disfluency word; and

calculating said probability based on said first and said second language models, if said preceding word has been judged to be a disfluency word in said step (d).

43. (Original) The storage medium according to claim 39, wherein said computer program is designed to make the computer execute the additional step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

44. (Original) The storage medium according to claim 40, wherein said computer program is designed to make the computer execute the additional step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

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45.   (Original)   The storage medium according to claim 41, wherein said computer program is designed to make the computer execute the additional step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

46.   (Original)   The storage medium according to claim 42, wherein said computer program is designed to make the computer execute the additional step of:

calculating said probability based on said second language model, if said preceding word has been judged as not being a disfluency word in said step (d).

Claims 47-48 canceled.